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IFW

Attorney Docket No. 5405.301

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Newgard et al.
Application No.: 10/760,644
Filed: Janaury 20, 2004
For: LACTATE DEHYDROGENASE AS A NOVEL TARGET AND REAGENT FOR DIABETES THERAPY

Date: June 18, 2004

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. § 1.97(b)

Sir:

Attached is a list of documents on Form PTO-1449, together with a copy of any listed foreign patent document and/or non-patent literature. A copy of any listed U.S. patent and/or U.S. patent application publication is not provided herewith in accordance with the waiver by the U.S. Patent and Trademark Office of requirements under 37 C.F.R. § 1.98(a)(2)(i) for all U.S. national patent applications filed after June 30, 2003 and for all international applications that have entered the national stage under 35 USC § 371 after June 30, 2003.

It is requested that these documents be considered by the Examiner and officially made of record in accordance with the provisions of 37 C.F.R. § 1.56 and Section 609 of the MPEP.

No fee is believed due. However, the Commissioner is hereby authorized to charge any deficiency or credit any overpayment to Deposit Account No. 50-0220.

Respectfully submitted,

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I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Sarah Brunmeier

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FORM PTO-1449 U.S. Department of Commerce
Patent and Trademark Office

LIST OF DOCUMENTS CITED BY APPLICANT

(Use several sheets if necessary)

A1 of A2

Attorney Docket Number	Serial No.
5405.303	10/760,732

Applicants: Christopher B. Newgard

Filing Date: January 20, 2004

Group: TBN

U. S. PATENT DOCUMENTS

Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing Date if Appropriate
	1.	US-6,503,743		Ladunga, et al.			
	2.	US-5,744,327		Newgard			
	3.	US-6,194,176		Newgard, et al.			
	4.	US-5,747,325		Newgard			
	5.	US-5,792,656		Newgard			
	6.	US-5,811,266		Newgard			
	7.	US-5,427,940		Newgard			
	8.	US-5,993,799		Newgard			
	9.	US-6,087,129		Newgard, et al.			
	10.	US-6,110,707		Newgard, et al.			
	11.	US-6,429,006		Porro, et al.			
	12.	US-6,268,189		Skory			
	13.	US-6,057,141		Uchida, et al.			

i. FOREIGN PATENT DOCUMENTS

		Document Number	Date	Country	Class	Subclass	Translation Yes | No
	14.	WO 97/26321		Newgard, et al.			
	15.	WO 97/26334		Newgard, et al.			

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	16.	AINSCOW, et al., "Acute overexpression of lactate dehydrogenase-A perturbs β-cell mitochondrial metabolism and insulin secretion," *Diabetes* **49**: 1149-1155 (2000).
	17.	AKAI, et al., "Isolation and characterization of a cDNA and a pseudogene for mouse lactate dehydrogenase-A isozyme," *Int. J. of Biochem.* **17**:5 645-648 (1985).
	18.	ALCAZAR, et al., "Importance of lactate dehydrogenase for the regulation of glycolytic flux and insulin secretion in insulin-producing cells," *Biochem. J.* **352**: 373-380 (2000).
	19.	BERMAN et al., "Fundamental metabolic differences between hepatocytes and islet β-cells revealed by glucokinase overexpression," *Biochemistry* **37**:13 4543-4552 (1998).
	20.	BROOKS et al., "Role of mitochondrial lactate dehydrogenase and lactate oxidation in the intracellular lactate shuttle," *Proc. Natl. Acad. Sci. USA* **96**: 1129-1134 (1999).

EXAMINER _____ DATE CONSIDERED

*EXAMINER Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant

FORM PTO-1449 U.S. Department of Commerce Patent and Trademark Office	Attorney Docket Number 5405.303	Serial No. 10/760,732
LIST OF DOCUMENTS CITED BY APPLICANT (Use several sheets if necessary) A1 of A2	Applicants: Christopher B. Newgard	
	Filing Date: January 20, 2004	Group: TBN

	21.	FUKASAWA et al., "Complete nucleotide sequence of the mouse lactate dehydrogenase-A functional gene: comparison of the exon-intron organization of dehydrogenase genes," *Genetics* **116**: 99-105 (1987).
	22.	FUKASAWA et al., "Nucleotide sequence of the putative regulatory region of muse lactate dehydrogenase-A gene," *Biochem. J.* **235**: 435-439 (1986).
	23.	"Homo sapiens lactate dehydrogenase A LDHA, mRNA," Accession No. NM_005566; NCBI Database, 20 December 2003.
	24.	ISHIHARA et al., (Abstract) " Overexpression of monocarboxylate transporter and lactate dehydrogenase alters insulin secretory responses to pyruvate and lactate in β cells," *The Journal of Clinical Investigation* **104**: 1621-1629 (1999).
	25.	JENSEN et al., "A new model for fuel stimulated insulinsecretion based on studies of adenovirus-mediated lactate dehydrognase overexpression in INS-1-derived cells," *Diabetes* **51**: A393 (2002).
	26.	JENSEN et al., "A novel mechanism for glucose-stimulated insulin secretion involving mitochondrial metabolism of lactate," Keystone Symposia January 21-26, 2003 (Abstract and Poster).
	27.	LI et al., "Protein structure and gene organization of mouse lactate dehydrogenase-A isozyme," *Eur. J. Biochem.* **149**: 215-225 (1985).
	28.	LU, et al., "^{13}C NMR isotoper analysis reveals a connection between pyruvate cycling and glucose-stimulated insulin secretion (GSIS)," *PNAS* **99**: 5 2708-2713 (March 2002).
	29.	"Mouse LDH-A gene for lactate dehydrogenase A (exons 1-2)," Accession No. X03753; NCBI Database, 9 April 1993.
	30.	"Mouse LDH-A gene for lactate dehydrogenase-A," Accession No. Y00309 M27554; NCBI Database, 20 November 1997.
	31.	"Mus musculus lactate dehydrogenase 1, A chain (ldh1), mRNA," Accession NO. NM_010699; NCBI Database 7 January 2002.
	32.	NOEL et al., "Engineering of glycerol-stimulated insulin secretion in islet beta cells," *The Journal of Biological Chemistry* **272**: 30 18621-18627 (1997).
	33.	"Rattus norvegicus lactate dehydrogenase A (Ldha), mRNA," Accession No. NM_017025; NCBI Database, 24 December 2003.
	34.	"Rattus norvegicus lactate dehydrogenase A (Ldha), mRNA," Accession No. NM_017025; NCBI Database, 14 January 2003..
	35.	SCRABLE, et al., "Rhabomyosarcoma-associated locus and MYOD1 are syntenic but separate loci on the short arm of human chromosome 11," *Proc. Natl. Acad. Sci. USA* **87**: 2182-2186 (March, 1990).
	36.	ZHAO et al., "Overexpression of lactate dehydrogenase A attenuates glucose-induced insulin secretion in stable MIN-6 β-cell lines," *FEBS* **430**: 213-216 (1998).

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